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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,531	09/27/2001	Takefumi Oguma	NEC01P175-JNb	9259
21254	7590	07/25/2005	EXAMINER	
MCGINN & GIBB, PLLC 8321 OLD COURTHOUSE ROAD SUITE 200 VIENNA, VA 22182-3817			SINGH, DALZID E	
		ART UNIT		PAPER NUMBER
		2633		

DATE MAILED: 07/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/963,531	OGUMA, TAKEFUMI	
	<b>Examiner</b>	<b>Art Unit</b>	
	Dalzid Singh	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 29 April 2005.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-9 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 8 and 9 is/are allowed.  
 6) Claim(s) 1 is/are rejected.  
 7) Claim(s) 2-7 is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 27 September 2001 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1. Certified copies of the priority documents have been received.  
 2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>27 September 2001</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### ***Election/Restrictions***

1. Applicant's election without traverse of the restriction requirement in the reply filed on 29 April 2005 is acknowledged.

### ***Claim Objections***

2. Claim 8 is objected to because of the following informalities:

In claim 8, line 11, the claim recites "nodes arranged as appropriately midway..."

The term "appropriately" is unclear since it is not known what applicant considers as "appropriate". Correction is required.

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tei et al (Japanese Patent No. 11-031859; translation is provided) in view MacDonald et al (US Patent No. 6,011,623).

Regarding claim 1, Tei et al show an optical system for output monitor/control device, as shown in Fig. 1, comprising:

a beamsplitter (5) that receives a light beam, branches the received light beam into two light beams;

a first (PD1) and second (PD2) photoelectric conversion means each for receiving a respective one of two light beams that have emerged from beamsplitter (23); and

calculation means (9) for calculating predefined discrimination formula to evaluate a wavelength change in each of said light beams based on conversion outputs of said first and second photoelectric conversion means, wherein said conversion outputs change responsively to a wavelength change (the calculation means (9) calculates and evaluate wavelength change based on the conversion output from photodetector and provide such information to wavelength control means (10) and the change the wavelength of the laser; see paragraph [0017] and [0018] in the detailed description of the translation).

Tei et al disclose the use of beamsplitter (5) to receive and branch light beam and differ from the claimed invention in that Tei et al do not specifically disclose a Mach-Zehnder circuit that receives light beam; branches the received light beam into two light beams having phase difference of 180 degrees; and transmits each of the light beams, exhibiting a periodic optical transmittance-optical frequency characteristic with period frequency interval corresponding range. However, in optical communication system it is well known to provide Mach-Zehnder circuit. MacDonald et al is cited to show such well known concept. In Fig. 2 and col. 5, lines 20-44, MacDonald et al teach the use of Mach-Zehnder interferometer which branches (by splitter (204)) the received light beam

into two light beam and provide 180 degrees phase shift to one the light beam. MacDonald et al further teach that the Mach-Zehnder interferometer exhibit output response having free spectral range (see col. 4, lines 59-67 to col. 5, lines 1-7). Therefore, it would have been obvious to an artisan of ordinary skill in the art at the time the invention was made to provide the Mach-Zehnder circuit, as taught by MacDonald et al, in place of the beamsplitter in the optical communication system of Tei et al. For example, such Mach-Zehnder interferometer could be coupled between the LD (1) and the calculation means (9). One of ordinary skill in the art would have been motivated to do such in order to provide circuit which separate the light beam without additional optical component such as optical filter and hence provide compact packaging and reduce cost.

***Allowable Subject Matter***

5. Claims 8 and 9 are allowed.
6. The following is a statement of reasons for the indication of allowable subject matter:

Claim 8 is allowable because the prior art of record (Fig. 2 as submitted by applicant) and MacDonald et al (US Patent No. 6,011,623) does not specifically teach or suggest that optical communication system comprising:

an arrayed waveguide diffraction grating for receiving the wavelength-division-multiplexed optical signal and demultiplexing the multiplexed optical signal to generate demultiplexed optical signals;

Mach-Zehnder circuits each of which receives a demultiplexed optical signal, branches the demultiplexed optical signal into two light beams having a phase difference of 180 degrees and transmits each of these light beams, exhibiting a periodic optical transmittance-optical frequency characteristic having a period of a frequency interval that corresponds to a predetermined free spectral range.

Claims 2-7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Vali et al (US Patent No. 6,166,815) is cited to show optical interferometer sensor.

Heflinger et al (US Patent No. 6,396,605) is cited to show tuning an optical interferometer.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dalzid Singh whose telephone number is (571) 272-3029. The examiner can normally be reached on Mon-Fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571) 272--3022. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DS  
July 20, 2005

*Dabid Singh*